## REMARKS

Claims 1, 13, and 23 have been amended and claim 21 has been canceled. As such, claims 1-7, 13-20, and 22-25 are currently pending in the case. Further examination and reconsideration of the presently claimed application are respectfully requested.

### Allowed Claims

Applicant appreciates the Examiner's allowance of claims 19 and 20 and awaits formal allowance of the remaining claims.

### Section 112 Rejection

Claim 23 was rejected under 35 U.S.C. § 112, second paragraph, for being indefinite. To expedite prosecution, claim 23 has been amended. The modification is believed to clarify the claim language in a manner that addresses the concerns expressed in the Office Action, and does not present new subject matter. Accordingly, removal of this rejection is respectfully requested.

### Section 102 Rejections

Claims 1-7 and 21-23 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,130,163 to Yi et al. (hereinafter referred to as "Yi"). Claim 21 has been canceled rendering rejection thereto moot. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. Of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), MPEP 2131. Yi does not teach or suggest all limitations of the currently pending claims, some distinctive limitations of which are set forth in more detail below.

**Yi does not teach or suggest polishing a topography with a polishing solution on a polishing pad, wherein no water has been added to the polishing solution on the polishing pad and no water has been added to the polishing solution prior to depositing the polishing solution on the polishing pad.** Amended claim 1 recites: "[a] method for processing a semiconductor topography, comprising polishing the topography with a polishing solution on a polishing pad without adding water to the

polishing solution that is on the polishing pad during the polishing, and wherein water is not added to the polishing solution before the polishing solution is deposited on the polishing pad." Support for such limitations may be found, for example, on page 7, lines 7-9, of the present specification: "... reducing, and even, eliminating the rapid addition of large quantities of water to a slurry during the primary polishing step as described herein may cause fewer agglomerated particles to form."

Yi specifically teaches adding deionized water to a slurry prior depositing the slurry on a polishing pad of a CMP apparatus to dilute the slurry. In fact, the objective of Yi is to adjust the pH of deionized water to match the pH of a slurry prior to being mixed with the slurry. As such, Yi fails to anticipate the limitations of claim 1. Furthermore, modifying Yi to not add deionized water to a slurry prior to depositing the slurry on a polishing pad would change the operation of the system described therein. Consequently, there is no motivation to modify Yi or combine Yi with other references to teach the limitations of claim 1. If the proposed modification or combination of the prior would change the principle operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). MPEP 2143.02.

For at least the reasons set forth above, Yi fails to teach or suggest the limitations of claim 1. Consequently, claim 1 and claims dependent therefrom are patentably distinct from Yi. Accordingly, removal of this rejection respectfully requested.

**Section 103 Rejections**

Claims 13-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yi in view of U.S. Patent No. 6,494,985 to Sotozaki et al. (hereinafter referred to as "Sotozaki"). Claims 24 and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yi in view of U.S. Patent No. 5,738,574 to Tolles et al. (hereinafter referred to as "Tolles"). To establish a *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974), MPEP 2143.03. Obviousness cannot be established by combining or modifying the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion or incentive to do so. *In re Bond*, 910 F. 2d 81, 834, 15 USPQ2d 1566, 1568 (Fed. Cir. 1990). The cited art does not teach or suggest all limitations of claims 13-18, 24 and 25, some distinctive limitations of which are set forth in more detail below.

**None of the cited art teaches or suggests polishing a topography with a polishing solution on a polishing pad, wherein no water has been added to the polishing solution on the polishing pad and no water has been added to the polishing solution prior to depositing the polishing solution on the polishing pad.** These are the limitations of claim 1 discussed above in response to the § 102(b) rejection of claims 1-7 and 21-23. As noted above, Yi does not teach or suggest the limitations of claim 1. In addition, there is no motivation to modify Yi or combine Yi with other references to teach the limitations of claim 1. Furthermore, neither Sotozaki nor Tolles appear to teach or suggest the limitations of claim 1. In particular, neither Sotozaki nor Tolles appear to specifically teach the exclusion of adding water to a polishing solution prior to or during a polishing process as recited in claim 1. In fact, neither Sotozaki nor Tolles teach the manner in which the polishing solutions used by the polishing apparatuses described therein are used or prepared.

Without a specific teaching, one skilled in the art would presume the methods described therein follow conventional techniques. Yi specifically teaches that water is commonly used to dilute polishing solutions for CMP processes. "As in known in the art, deionized water is used by CMP machines for various purposes. For example, for concentrated slurries, deionized water is used to dilute the slurry in the slurry distribution system." (Yi, column 2, lines 23-27). In light of such teachings, one skilled in the art would presume the slurries used in Sotozaki and Tolles would be diluted prior to or during the polishing processes described therein. Without any teaching or suggestion within Sotozaki or Tolles for not adding water to a polishing solution prior to or during a polishing process, there is no motivation within Sotozaki or Tolles to teach the limitations of claim 1. Accordingly, claim 1 is asserted to be patentably distinct over the cited art.

**None of the cited art teaches or suggests polishing a semiconductor topography with a polishing pad having residual amounts of a polishing solution thereon and depositing water on the polishing pad in a plurality of dispense intervals subsequent to the start of and during the step of polishing the topography.** Amended claim 13 recites, in part:

> A method for processing a semiconductor topography, comprising ... subsequently polishing the semiconductor topography with the polishing pad having residual amounts of the polishing solution thereon; and depositing water on the polishing pad in a plurality of dispense intervals during the step of subsequently polishing the semiconductor topography ... wherein the step of depositing the water is conducted subsequent to starting the step of subsequently polishing the semiconductor topography.

Support for such limitations may be found, for example, on page 25, lines 26-28 of the present specification: "[w]ater may be deposited upon the polishing pad in relatively short dispense intervals that may include every other phase of the polishing (i.e., the second, fourth, and sixth phases)." Although Sotozaki teaches gradually increasing the amount of water added to a polishing pad during a polishing process, Sotozaki fails to teach dispensing water subsequent to the start of polishing a topography. In fact, Sotozaki specifically refers the process in which water is gradually added to a polishing pad as "water polishing" (see column 8, lines 29-40). There is no teaching or suggestion of delaying the deposition of water of the polishing pad during such a process or any teaching or suggestion of what purpose such a delay would serve. Yi and Tolles do not appear to teach or suggest depositing water directly on to a polishing pad during a polishing process and, therefore, cannot be used to overcome the deficiencies of Sotozaki. As such, none of the cited art, taken alone or in combination, teaches or suggests the limitations of claim 13.

For at least the reasons set forth above, none of the cited art teaches or suggests the limitations of claims 1 and 13. Consequently, claims 1 and 13, as well as claims dependent therefrom, are patentably distinct from the cited art. Accordingly, removal of this rejection is respectfully requested.

## CONCLUSION

This response constitutes a complete response to the issues raised in the final Office Action mailed June 2, 2004. In view of the remarks traversing the rejections, Applicants assert that pending claims 1-7, 13-20, and 22-25 are in condition for allowance. If the Examiner has any questions, comments, or suggestions, the undersigned earnestly requests a telephone conference.

No fees are required for filing this amendment; however, the Commissioner is authorized to charge any additional fees, which may be required, or credit any overpayment, to Conley Rose, P.C. Deposit Account No. 03-2769/5298-07600.

Respectfully submitted,

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